EFFECTIVENESS OF OIL MASSAGE ON SELECTED BEHAVIORAL RESPONSES AMONG NORMAL NEWBORNS IN SELECTED URBAN AREAS, SALEM

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- Marcus Aurelius

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ABSTRACT

A study to evaluate the effectiveness of oil massage on selected behavioral response among normal newborns in selected urban areas, Salem.

Quasi experimental pre and post test control group design was adopted. Non probability convenience sampling technique was used to select 60 samples, among which 30 were assigned to experimental group and 30 were assigned to control group. Structured interview schedule was used to collect the demographic variables and Modified Brazelton Newborn Behavioral Assessment Scale was used to assess the selected behavioral responses of newborns.

The findings showed that in pretest 7 (23.3%) samples from experimental group and 10 (33.3%) samples from control group had good behavioral response, whereas in post test 30 (100%) samples from experimental group and 9 (30%) samples from control group had good response. The difference in mean percentage of post test among newborns in experimental and control group on selected behavioral responses was highest (32.43%) for feeding pattern and lowest (3.34%) for crying spells after oil massage. The post-test't' value 20.35 at $p<0.001$ level suggest that oil massage had significant effect on the selected behavioral responses of newborns. The chi-square value revealed that in experimental group there was significant association found between selected behavioral responses such as frequency of sleep, number of voiding and frequency of feeding with their selected demographic variables mode of delivery and birth weight whereas in control group there was no association found between the selected behavioral responses with their elected demographic variables.

CHAPTER - I

INTRODUCTION

Love consists in this ……
Where two souls touch, protect
and greet each other.

Newborn massage has long been a traditional practice and traditional applications of it are usually passed down from one generation to the next. In 20th century due to scientific advancement many "folk practices" like infant massage were discarded. Now the modern science is rediscovering age-old treatments, and the field of medicine is incorporating these interventions into scientific protocols. **(Muscarella, 2002)**

Newborn massage is one such treatment that is currently being explored by scientists, and educators with encouraging results. Among the benefits attributed to newborn massage are greater relaxation and body awareness; circulation improves, hormonal and digestive systems; and muscle tone and sleep patterns improves. **(Scafidi, 2002)**

Massage therapy encompasses a wide variety of techniques that manipulates the soft tissue. The word massage is derived from the Latin word "Massa" or green massein" or "masso" meaning to touch, handle, squeeze or knead. Massage or touch therapy is natural almost instinctive way to care. By lightly touching, rubbing, the entire body causes comfort both physically and psychologically.

Nature massages baby in the womb, where contractions rhythmically squeeze and push, and providing stimulation to the baby. Studies show that more babies are touched, nurtured and tenderly massaged, the happier and more balanced they grow. Massaging the baby helps to fulfill their emotional, psychological and physical needs.

The act of touch fulfills the basic need to feel safe comfortable and loved. Touch is an intrinsic factor in child development. Touch places an important role in growth, development and overall well- being. Massage is one of the most beautiful and gentle methods of touch. Indian form of newborn massage is appreciated all over the world. It is noted that massage with oil is more beneficial as compared to massage without oil. It is important to use oil for massage which will prevent friction and abrasions and the skin. The oil we select for massage should be non occlusive so that it does not block the skin pores and allows the skin to breathe. It should be safe and mild to suit the baby's delicate skin and the ingredients should be thoroughly tested for their potential to cause contact sensitivity. **(Sandipan Dhas, 2007)**

New born period is traditionally designated as the period from birth to one month. During this period, the baby's senses sharpen and develop the process of attachment to social relationships. When the mother touches the baby they feel more secure. This leads to successful development by providing a warm, personal relationship with the mother. Newborns learns the sensori motor experiences from the mothers gentle touch, holding, rocking, moving and stroking them helps to minimize the stress responses. Touch is considered as an effective tool for promoting physical contact with the infant. **(Kempe, et.al, 2004)**

Along with proper stimulation and nurturing care the baby, feeling of security is also essential for future development. Newborn depends on others for food and protection. When the needs of newborn like bonding, comfort, contact, nutritional sustenance are fulfilled, newborn develops the first emotional relationship with the mother. **(Adelle Pilliters, 2009)**

Newborn may develop a lack of sense in trust, and responds with listlessness, immobility, unresponsiveness, unhappiness and insomnia, if their needs are not met. Mothers may love their baby, but they may find it difficult to express or become attached, because of the differences in individual experiences and backgrounds.

Massage will help the baby to develop bond between mother and child. Massage will help the newborn to identify the presence of their mother and stimulate their development. **(Niemi. J, 2010)**

The ultimate aim of this intervention is to impart knowledge to the mothers so that they can identify newborn cues, their behavioral state, and various techniques of massage using coconut oil, by benefiting them to practice effectively and to improve their behavioral responses.

Need for the Study

In the world of massage therapy, as natural healing was considered as a sacred system. However due to the changes in culture massage therapy became as a form of luxury rather than a method of healing. But still massage is shown to be an effective method of relaxation in modern times.

It is reported that the most common complementary and alternative medicine (CAM) employed among the general population are massage, acupuncture, aromatherapy etc. The oldest complementary and alternative therapies, among all is massage which helps in healing process and general human well-being for more than 2000 years. **(Frederick, 2006)**

Since ancient times massage is defined as the intentional and systematic manipulation of the soft tissues present in the body to improve health, general well being and healing. It is said that a wide variety of techniques are used in massage treatments like *an*-pressing, *mo*-rubbing, and *dou*-vibrating. In conclusion there are

two fundamental approaches to massage, which are wellness massage and medical massage. Wellness massage is used in preventive healthcare regimes for health maintenance, while medical massage is used for rehabilitative treatments. **(Lucinda Liofell, 2001)**

Literature review reveals that the practice of massage originated from China, India and flourished in Persia. Newborn massage is in use and has a long tradition in India. During Vedic period, ayurvedic baby massage was started for cleansing the baby immediately after birth. They used soft wheat dipped in almond oil and turmeric powder for cleansing. Healthy touch is a key element in promoting bonding and attachment between the infant and the mother. Attachment is a shared experience, exchange in mutual feeling of love, comfort and trust. Loving touch is needed for nurturing close relationships. Touch plays a crucial role in development of emotional and physical health. **(Montague, 2001)**

Security develops gradually as a result of feeling of love. It was also said that touch is an essential behavioral need, as breathing, exercise and food. Further explained that maternal touch helps infant to develop normally. Lack of touch may result in abnormal behaviors newborns who are provided with maternal touch and warms develops knowledge of security, comfort and trust.

Findings reveal that massaging the newborns could elicit cutaneous, proprioceptive, vestibular and sensory perceptions. Sensations are the earliest to develop during gestation and it mainly provides stimulation, organization, communication and emotional exchange. When the newborns are massaged constantly they develop less behavioral distress, more quiet sleep, improvement in body weight, reduction in stress and improvement in maternal newborn relationship. **(Branone. V. Joy, 2000)**

The newborn health challenge faced by India is higher than that experienced by any other country in the world. It is anticipated that out of 3.9 million neonatal deaths that occur worldwide, almost 30% occur in India. These deaths are due to immature immune system which predisposes the newborns to develop severe infections, which may precipitate to life threatening illness. Poor care giving practices adopted by families may decrease the chances of survival in newborns. Newborn's skin is more susceptible to trauma and infections hence it requires special care. Massage therapy can be a method in building the immune system of a newborn.

A comparative study was conducted at department of neonatology, LTM Medicine College and general hospital, Mumbai, to evaluate the effectiveness of coconut oil massage Vs mineral oil massage and placebo on growth velocity and neuro behavior among full term and pre term babies. An open randomized control trial was used. For babies in each group received coconut oil, mineral oil or placebo. Oil massage was given by trained person and which was continued for 31 days by mother. Neuro behavior outcome was assessed using Brazelton Newborn Behavioral assessment scale. The study findings ('t' value 15.3 at $p < 0.05$ level) concluded that coconut oil massage was more effective than mineral oil massage. **(Shankarnarayanan, K., et al, 2004)**

Many studies reveal that among all the other oil massages, coconut oil is considered to be the finest oil for massaging the baby. It is commonly used in southern parts of India for baby's massage. It contains antibacterial and antiseptic properties which help to prevent skin infections in newborns.

Indigenous house hold behaviors used by the families in caring for their newborns should be simple, culturally compatible and easy to be practiced by any

level of socio economic families. The logic of practicing such behaviors can help to encourage other families adopt similar behaviors.

Hence the researcher planned to take up this study of newborn oil massage which is an enjoyable way of helping both parent and newborn to undergo the complex process of adjustment, when a new baby joins the family. And also the researcher felt there is a need to conduct a study on newborn massage using coconut oil, keeping in mind the proximity, availability, cost effectiveness and perceived competence about coconut oil and its benefits.

Statement of the Problem

A Study to Evaluate the Effectiveness of Oil Massage on Selected Behavioral Responses among Normal Newborns in Selected Urban Areas, Salem.

Objectives

1. To assess the selected behavioral responses among normal newborns in experimental and control group.
2. To evaluate the effectiveness of oil massage on selected behavioral responses among normal newborns in experimental and control group.
3. To associate selected behavioral responses among normal newborns in experimental and control group with their selected demographic variables.

Operational Definitions

Effectiveness:

It refers to the statistically significant difference in the behavioral responses of normal newborns after oil massage for a period of 15 days, which is assessed by modified Brazelton's Newborn Behavioral Assessment Scale.

Oil massage:

It is the method of massage using coconut oil by stroking, rubbing and kneading all over the body of the newborn except the face and palm for about 10-15 minutes a day.

Behavioral responses:

The behavioral responses (crying spells, sleeping pattern, feeding frequency & motor activity) are observed among normal newborns using modified Brazelton's Newborn Behavioral Assessment scale before and after coconut oil massage for 15 days.

Normal Newborns:

The babies who are in their 3–28 days of life without any abnormalities.

Assumptions

- Each normal newborn's behavioral response is unique.
- Coconut oil massage may improve behavioral responses among normal newborns.
- Coconut oil massage may be associated with their cultural, religious and other factors.

Hypotheses

H_1: There will be significant difference in selected behavioral responses among normal newborns of experimental and control group after application of oil massage at $p<0.05$ level.

H_2: There will be significant association in selected behavioral responses among normal newborns of experimental and control group with their selected demographic variables at $p<0.05$ level.

Delimitations

The study is limited to

- ? the normal newborns of selected urban areas, Salem.
- ? those who are willing to participate in the study.
- ? only 4 weeks.
- ? only 60 samples.

Projected Outcome

The study was conducted to evaluate the effectiveness oil massage on selected behavioural responses among normal newborns. Non pharmacological approaches incorporating traditional method of massaging with appropriate technique using pure coconut oil may help to improve the behavioral responses of normal newborns.

Conceptual Framework

A conceptual frame work is constructed with concepts, which are the mental images of phenomenon. These concepts are connected together to express the relationship between them. A model is used to denote symbolic representation of the concepts.

The investigator adopted Kathryn.E.Barnards Parent Child Interaction Theory (1997). Here Bernard's goal signifies that how parent interacts with the child through a supportive environment. Here touch is the more improved form which is given through various massaging techniques by the mother to the newborn. Here massage makes the infant more comfort, secure and improves the wellbeing.

Hence the researcher had adopted this theory to override the negative meanings of touch by creating new massage that is touch is comforting and relaxing by allowing the mother to realize the massage and its importance.

Major concepts of the theory:

Mother's sensitivity to infants cues:

Mother has the ability to recognize and respond to infant cues. She identifies the behavior of the infant by using tactile stimulation, rhythm of the infant and duration to set the tone of interaction.

Newborns clarity of cues:

The newborn sends cues to the mother signaling desires that he/she is ready to interact/ feeling distressed.

Mother's ability to alleviate distress:

Mother is able to calm the distressed newborn by taking appropriate action.

Mothers social and emotional growth fostering activities:

Mother supplies a supportive environment using voice, tone, touch and movement. This clearly reinforces the mother's responsiveness to the infant.

Newborn characteristics:

Newborn has the characteristics of experiencing touch as comfort pleasure. It is important as that of feeding, sleeping and self regulation pattern.

Mother's characteristics:

Mother has the characteristics of including physical and psychological assets concerning the newborns behavior and adopts according to it.

Environmental cues:

It affects both mother and the infant. Hence a safe and warm environment is preferred for both to interact.

Interactional behavior between mother and newborn:

The interaction between mother and newborn occurs first, and foremost by physical touch, which also has its psychological impact.

Responsiveness of newborn towards mothers touch:

As the mother gently begins by various massage techniques, newborn learns that touch is pleasurable and enjoyable.

Mother's action:

Mother gently proceeds the massage techniques for the infant at various locations and gradually progresses the duration. The transition of touch aversion to touch acceptance would be taking place finally.

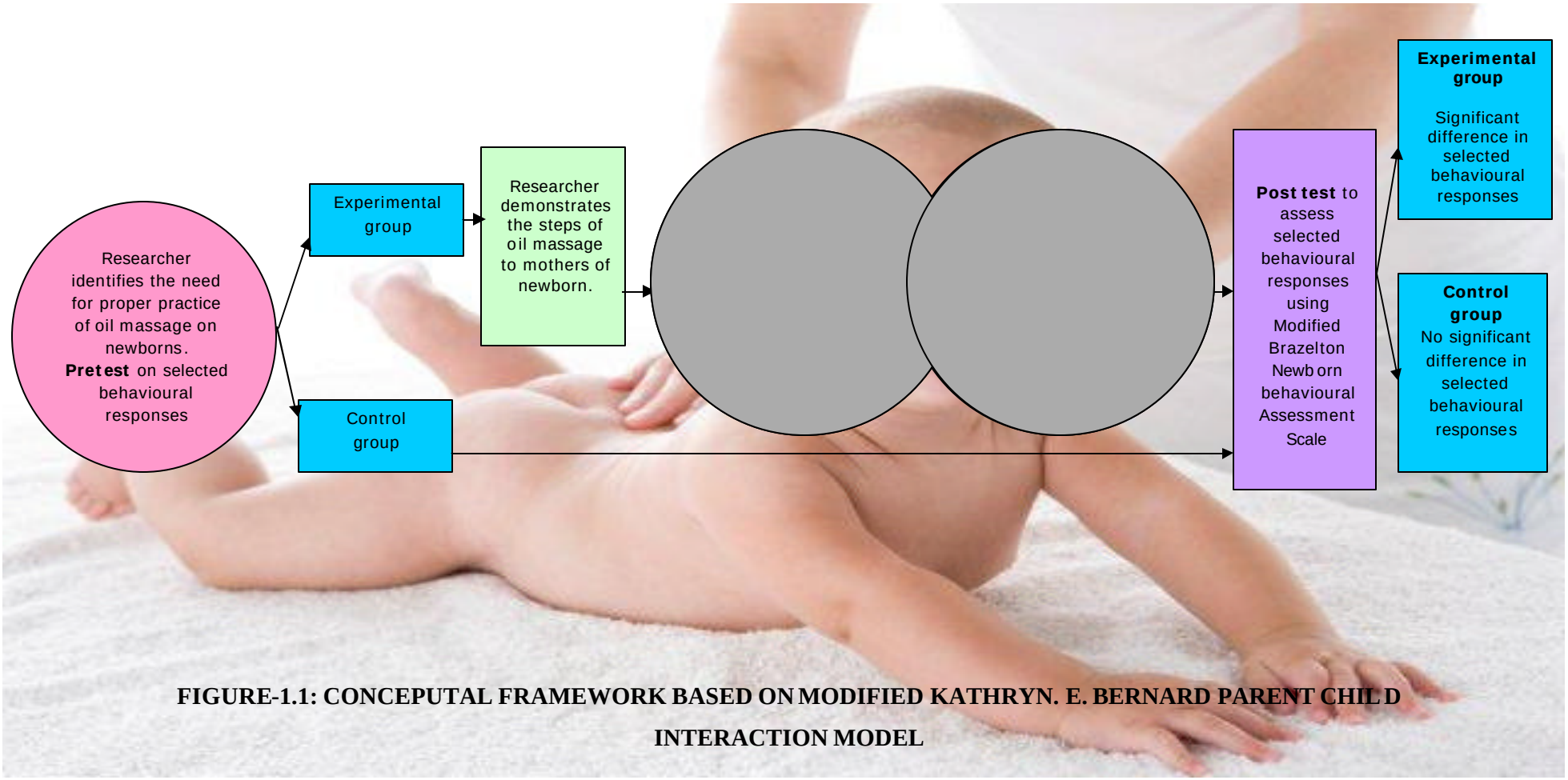

FIGURE-1.1: CONCEPUTAL FRAMEWORK BASED ON MODIFIED KATHRYN. E. BERNARD PARENT CHILD INTERACTION MODEL

Summary

This chapter dealt with introduction, need for study, and statement of the problem, objectives, operational definitions, assumptions, hypotheses, delimitations, projected outcome, and conceptual framework.

CHAPTER II

REVIEW OF LITERATURE

The task of reviewing research literature for research involves identification, selection, critical analysis and written description of existing information on the topic of interest. It is usually advisable to under take a literature review on a subject before actually conducting a research project. Such a review can play a number of important roles. **(Polit and Hungler, 2003)**

In this chapter the literature review consists of the following aspects,

Review of Literature of the Present Study is arranged in the Following Headings:

- Literature related to behavioral responses of newborn in relation with massage
- Literature related to the effectiveness of oil massage in newborns
- Literature related to Brazelton Newborn Behavioral Assessment Scale.

Literature related to Behavioral Responses of Newborn in Relation with Massage

Boby Theres Antony, (2009) conducted a study on application of coconut oil massage therapy to hospitalized children with sleep pattern disturbance at pediatric ward, Sri Ramakrishna institute of paramedical sciences, Coimbatore. 30 samples were selected by random method. 15 samples were assigned to experimental group and 15 samples were assigned to control group. To the experimental group coconut oil massage therapy was provided 20-25 minutes per day for 4 days. At the end of 4^{th} day the sleep was assessed using Morrelles sleep habit scale. The study findings revealed that the post test score of 17.75 (44%) was comparatively lower than the pretest score 25.33(63%). The study findings ('t' value 11.6 at $p < 0.05$ level) concluded that coconut oil massage was highly effective in improving sleep pattern among hospitalized children with sleep pattern disturbance.

Hernandez–Reif, Diego and field, (2006) conducted a study on effectiveness of massage therapy on thermoregulation. In this study 40 newborns were selected randomly. 20 samples were assigned to experimental group and 20 samples were assigned to control group. The newborns who received massage had a greater increase in temperature while compared with control group.

Feijo. L, et.al, (2006) conducted an experimental study to evaluate the effectiveness of newborn massage on stressful behaviors among newborns, at neonatal intensive care unit, Finland. 48 newborns were selected randomly. 24 samples were assigned to experimental group and 24 samples were assigned to control group. The samples from experimental group were given massage for 15 minutes three times a day for 5 days. The stress behaviors like (sneezing, crying, grimacing, yawing, jerking of limbs and finger flaring) were assessed and recorded before and after 5 days of newborn massage. The study findings revealed that there was a significant reduction in the duration of stressful behavior and movement in the newborns of experimental group while compared to the control group.

Grace. L and Robert E. Kretschmer, (2005) conducted a qualitative study to explore the dynamic interaction between a mother and her 11 months old visually impaired infant before and after the mother was taught massage. Purposive sampling method was used for selecting the samples. 14 frames related to mother baby interactions were observed before and after one week of massage. During the post intervention period 14 frames were observed, out of which 11(79%) were of positive interactions. Only 3(21%) of the frames were interpreted as nonengagement category. This study shows that infant massage is an important tool for facilitating attachment in infants.

Vimala Schneider Mcluce , (2004) suggests that newborn massage is a language of the love between mother and their infant, that hold more meaning than words can possibly express. Newborn massage is defined as a quality and intention of touch that is transformed into a shared experience

Phyllis. K.Davis, (2002) describes that touch is incredibly important part of our lives. Researches have found that the sense of touch has been detected in embryo less than 8 weeks old! They have also found that the sense of touch is the last sense to go when we die . The other early senses of smell and taste are also connected with touch. Again research has shown that babies of only 5 days old can differentiate their mothers smell and taste of her milk from other mothers. Massage builds on these senses, developing the bond between parent and child, a very special and intimate time, helping both to grow in confidence in their interaction with each other.

Vimala Schneider McClure, (2002) says newborn massage is a way of touching that involves listening, gentleness, and protectiveness. It is a systematic process in which the person giving massage learns to interpret the communication through the newborn's body language, monitoring and responding appropriately to the newborn's massages. It is very simple, it is very easy, and in terms of time, it is very brief. In Eurocentric cultures, infant massage is recently being discovered and researched. In the United States, massage therapy schools are beginning to teach infant massage. According to the national organization there are 4,000 therapists are available to teach massage.

Carlo Valerio, (2001) explains childhood development very much depends on parents and care takers desire and expectations. Parents impatiently wait for their child to walk, begin to speak, say his / her first word. A child develops more quickly whose parents desire their child to grow and develop rapidly.

Onozawa.k.Glover.V, Adans.D, Modikumar, (2001) conducted a randomized control trial study among depressed primi para mothers to asses the mother - infant interaction before and after practicing newborn massage. 34 depressed primi para mothers were selected, among which 17 were assigned to experimental group and 17 were assigned to control group. The massage techniques were taught to the samples from experimental group. The samples were asked to massage their newborns daily once for 5 weeks. The mother infant interactions were assessed before and after 5 weeks of newborn massage. The study findings revealed that practicing newborn massage has significant effect on mother – infant interaction as evidenced by 't' value 7.8 at $p < 0.05$ level.

Literature related to the Effectiveness of Oil Massage

Anjali Kulkarni, (2010) in his study found that oil massage results in improved thermoregulation by decrease in the convection losses through skin. A study conducted in Nepal, shows the incidence of early hypothermia in the first 2 hours after delivery was reduced by nearly 50% and the incidence of late hypothermia in the first 24 hours after birth was reduced by 30% by implementing one of three interventions after delivery like kangaroo care, traditional mustard oil massage under a radiant heater, or plastic swaddling. Significant increase in temperature has been noted in preterm infants who receive massage therapy. Oil massage has shown to remove the dead cells of skin and improve the texture of skin by preventing the dryness and cracking of the skin. Massage therapy helps to improve the skin barrier function. Coconut oil a key component of these ritualistic massages which can be administered to the newborn three times a day. Just like breast milk, coconut oil is rich in lauric acid. Lauric acid a fatty acid present in coconut oil has potent antimicrobial properties. Coconut oil is a good moisturizer for all skin types.

Ramasundari. B, (2008) conducted a study on effectiveness of coconut oil massage therapy on Health promotion of newborns, delivered by LSCS in OmShakthi Hospital, Krishnagiri. The convenience sampling technique was used to obtain 50 samples. Pre and post assessment was preceded by using Brazelton's Newborn Behavioral Assessment scale to assess the crying spell, sleeping pattern, feeding frequency. The subjects were given massage with coconut oil all over the body except face for 20 minutes per day for five days. The comparison of pre and post assessment level of effect of massage therapy revealed that the mean difference 1.8, standard deviation 0.388 and the paired 't' test value of 8.11, which was highly significant at $p < 0.001$ level in the sleeping time. In the feeding frequency the mean difference 1.07, with standard deviation 0.060 and the paired 't' test value of 7.44, showed high level of significant at $p < 0.001$ level. In the crying spell the mean difference 1.06, with standard deviation 0.070 and the paired 't' test value of 7.39, showed high level of significant at $p < 0.001$ level. The study concluded that newborn massage helped in achieving health promotion by applying massage therapy on newborns and the crying spells reduced, feeding frequency increased and sleeping time increased.

Diego, Field and Hernandez- Reif, (2007) conducted a randomized control trial among 48 neonates. The 48 neonates were randomly assigned to 3 groups, as control group, light pressure massage group and moderate pressure massage group. The massage therapy was given three times a day for 5 days. During the duration of the study, mean weight gained and mean calories consumed per day were recorded for each neonate. Electrocardiograms (ECGs) and electrogastrograms (EGGs) were collected 15 minutes before the treatment and 15 minutes after the treatment. The results indicated that the moderate pressure massage group had significant increase in vagal activity that peaked during the massage and an increase in gastric motility.

Cecilia Vardhini, (2006) conducted a study on effectiveness of coconut oil massage on selected parameters of growth and development among neonates at PSG hospital, Coimbatore. 30 samples were selected using purposive sampling technique.15 were assigned to experimental group and 15 were assigned to control group. Pre and post test was done using Denver developmental scale. Coconut oil massage was given to the newborns of experimental group using 5ml of oil for 30 minutes, for a period of 14 days. The paired't' test value of weight, height, head circumference, chest circumference and development was (13.20, 11.06, 11.22, 6.87, 15.01), in experimental group which was greater than the table value at degree of freedom (df=14) was significant at the level of $p < 0.01$. Hence the study concluded that there was significant difference between pre assessment and post assessment due to oil massage.

Agarwal KN Gupta, et.al, (2006) conducted a study in department of pediatrics, University of Medical Sciences and G.T.B Hospital, Delhi. Healthy babies full term born (125) were randomly divided into 5 groups. Four groups received massage using herbal oil, sesame oil, mustard oil and mineral oil daily for 4 weeks; whereas fifth group did not receive massage and served as control group. The variables measured were anthropometric measurements, microhaematocrit, serum proteins, creatinine and creatinine phosphokinase; blood flow using color doppler and sleep pattern. The study concluded that there was a significant improvement in all the above variables after oil massage.

Luke. C. Mullany, et.al, (2005) conducted a study on traditional practice of newborn massage among newborns in Nepal. Both quantitative and a qualitative methodologies were utilized to collect information on the prevalence, frequency, duration and reasons for oil application to the newborns in Sarlahi district of

Southeastern Nepal. The data was collected from 8580 mothers of newborns. The study findings reveled that 99.7% of newborns received some form of massage in the first 14 days of life, 90% of babies were massaged with in 6 hours of delivery. 80% of them gave oil massage 3 times a day and 99.1% of those reported gave massage at least once a day. The participants reported the reasons for giving neonatal oil massage is to make the baby strong (69.4%), to keep the baby healthy (49.5%), to keep the baby warm (40.8%), to make the baby's skin look good (23.6%). The study findings revealed that newborn oil massage was included in the routine newborn care by 99.7% of mothers in Nepal.

Arora and colleagues, (2005) tested the effects of weight gain when oil is used during massage in selected maternity Centers, Uttarpradesh.50 mothers trained in techniques of oil massage, massaged their newborns daily 10 minutes 4 times a day for 28 days.10 ml of sunflower oil was used for massage. The neonate's weights were measured weekly. The results indicated that the oil massage group gained more weight than the control group.

Barnett, (2005) describes that in different parts of the world people use various techniques to nurture their young, but a common practice that is often us in touch. Guajarati's in western India massage their infants because they believe that, it increases circulation, cultivating beauty and strong bones. Some British parents massage and rub their infants because they believe it strengthens the mother child bond. In Newzeland infant touch is centralized around the knees and ankles to help child's joints, whereas in Russia touch is thought to help the development of the central nervous system.

Jyothi Arora, Ajay Kumar and Siddharth Ramji, (2005) conducted a randomized controlled trial study to evaluate the effectiveness of oil massage on growth and neurobehaviour in very low birth weight preterm neonates. The study was conducted in a tertiary level neonatal unit of a teaching hospital, New Delhi. The subjects selected were neonates with birth weight <1500 grams, gestational age <37 weeks, receiving enteral feeds of at least 100ml/kg/day and less than 10 days of age. The subjects were randomized to one of the three groups like, massage with oil, massage without oil, no massage. Neurobehaviour was assessed using Brazelton's neonatal behavioural assessment scale, at enrolment and after 10 days of intervention. The post-test revealed that weight gain in the oil massage group (365.8 ? 165.2g) was higher when compared to the only massage group (290.0 ? 150.2g) and no massage group (285.0 ? 170.4g). Hence it was concluded that oil massage have significant effect on improving the weight of neonates.

Hae-Kyung, Lee, (2005) conducted a study to evaluate the effect of infant massage on weight gain, physiological and behavioural responses in premature infants, using an equivalent control pre-test –post-test design. The samples were divided into two groups of 13 infants with gestational age less than 36 weeks at birth, birth weight less than 2000grams and no congenital anomalies. The experimental group received the massage intervention twice daily for 10 days. Data on physiologic conditions (vagal tone, heart rate and oxygen saturation) and behavioural responses of the experimental group collected for 10 minutes pre and post massage. The findings revealed that the average weight was 1829.2grams (SD = 259.9) in the experimental group and 1732.3 grams (SD = 220.5) in the control group at the beginning of massage. The average weight gain in the experimental and control groups were 1829.9grams (SD =259.9) and 1732.3grams (SD=220.5) at the end of the 10 days

massage period. The paired 't' test revealed that there was significant difference in vagal tone between pre and post-test massage. And it was also identified that there was significant effects of infant massage in sleep state (F (1470) = 26.12, p=0.000), awake state (F (1470) = 26.52, p=0.000), frightening or crying (F (1470) = 4.23, p=0.04) and motor activity (F (1470) = 8.57, p=0.004) between the experimental and control group. The above findings reveal that infant massage has significant effect on weight gain and behavioral responses in premature infants.

Kirti Solanki, et.al, (2005) conducted a study on effect of transcutaneous absorption of topically massaged oil in neonates at Pune. 120 samples were randomly assigned to three oil groups like sunflower oil (n = 40), coconut oil (n = 40) and no oil (n =40). In each group babies were selected in three subsets as per gestational age as < 34 weeks, 34-37 weeks and >37 weeks. 5ml of the designated oil was massaged four times a day (6 hourly) for 5 days. Pre and post oil massage samples of blood were analyzed for triglyceride and acid profiles using gas groups and also in control group. Post oil triglyceride values were raised in both the oil groups. fatty acid profiles showed significant rise in EFAs (Linolenic acid and arachidonic acid) in safflower oil group and saturated fats in coconut oil group ($p<0.05$). The changes were more evident in term babies. Hence it was concluded that topically applied coconut oil can be absorbed in neonates and is probably available for nutritional purposes.

Carla Stephen, (2004) conducted a study in Sweden among 90 newborn babies. The objective of the study was to determine at what time the coconut oil massage can be given to the newborn. The newborns were divided into two groups 45 in each group. 45 newborns were given coconut oil massage in the morning combining it with singing songs to the babies. The other 45 was given coconut oil

massage in the evening combining it with singing songs to the babies. When assessed the 45 newborn babies who had coconut oil massage in the morning had good sleep and they were less fussy and relaxed through out the day.

Gary. L. Darmstadt and Samir. K. Saha, (2002) conducted a descriptive study on traditional practice of oil massage of neonates in Bangladesh. A questionnaire was administered verbally to the primary caretaker of 322 outpatients at the Dhaka Shishu Hospital, and to 20 outpatients at the Matlab Health Complex who presented over a four week period. The study findings revealed that more than 96% (320/332) of the primary caretakers applied one or more products to the skin of their newborn. 94.7% (303/320) of them reported using oil for massage. Among this 11.6% (37/320) used olive oil, 5.6% (18/320) used olive plus mustard oil, 4.4% (14/320) used other products and 78.4% (251 / 320) used mustard oil for massage more than 99% of them applied oil to the whole body. Oil massage was initiated on the first day of life in nearly half 47.5% (152/320) of the newborns and before the end of the third and fourth days of life in nearly three fourths 71.9% (230/320) and four-fifths 80% (256/320) of the cases respectively. Most of the mothers reported 55% (176 / 320) that they began oil massage on their own initiative, whereas others did so on the advice of the grand mother 25% (80 / 320), a neighbor 9.1% (29 / 320) or others 10.9% (35 / 320) such as elderly family members, midwives, traditional birth attendants and village healers. This study concluded that oil massage is an important practice in the daily care of the neonates and infants.

Onozawa.K, et.al, (2001) conducted a randomized control trial study, in which 34 primipara mothers were allocated to massage their babies with oil and compared with the control group. After 5 week session, improvements in mother infant interaction were seen. It was shown that 98% of samples from the experimental

showed significant improvement in mother infant interaction. Hence the study concluded that practicing newborn oil massage by the mothers would be effective for both mother and baby.

Field .T and Hrnandaz – Reif. M, (2001) conducted a study on effectiveness of oil massage on sleep pattern of newborns. 45 newborns were selected randomly and massage was given. Massage was given daily for 15 minutes prior to bed time for one month. Bed time stories were read to the newborns of control group. Based on parent diaries the massage versus the control group children showed fewer sleep delay behaviors and had a shorter latency to sleep onset by the end of the study.

Older, (2001) found that touch is very powerful element in human bonding and modified form is practiced as massage. It is estimated that Indian culture began practicing massage around 3000 BC and possibly much earlier than this. With the traditional holistic medical system called Auyrvedha leading the way. India incorporated massage into a treatment belief system that associated divinity and generations of old traditions. Backed by centuries of studies experiments and meditations, it was the efforts of ancient healers and scientist that helped develop the foundations of Ayurvedic healing. Hippocrates in 400 BC explained medicine as 'the art of rubbing'. An exotic use of massage in contemporary cultures was explained by Older, 1982. He noted that in semona massage is used for every ailment from diarrhea to migraines using mixtures of plants, flowers from trees, roots and coconut milk. In the cuba garlic and oil are applied to the stomach after a meal lodged in the stomach where it causes pain and fever.

Kuhn and colleagues, (2001) describes oil massage improves skin quality by removing dead skin cells and encouraging the release of the neonate's natural oil, which improves the skin resilience. The oil can help to hydrate the skin and prevent cracking and drying**.**

Literature related to Brazelton Newborn Behavioral Assessment Scale

The Brazelton Newborn Behavioral Assessment Scale is a multi-item scale designed by Brazelton and Nugent 1995. The basic score sheet consists of 28 behavioral items, 18 reflex items and 6 supplementary items. The supplementary items were constructed to measure the quality of the baby's responsiveness. The behaviors of newborns are clustered as reflexes, motor system, automatic stability, habituation, social instructiveness, organization, range of states, regulation of states and supplementary items.

Edward.Z, Tronick, (2007) conducted a study in university of Massachusetts, Amherst, US to identify the Brazelton Newborn Behavioral Assessment Scale as a bio maker of the effects of environmental agents on the newborn. 35 newborns were selected randomly and their behaviors assessed using Brazelton Newborn Behavioral Assessment Scale. It was concluded that Brazelton Scale is the most standardized, valid and reliable instrument currently available. It has been found to be sensitive to the behavioral effects of known teratogenic agents and to the potential disturbances in care taking produced by them.

Bobby Rita Jansi. L, (2006) conducted a study to evaluate the effect of oil massage on changes in weight and neuro behavioral responses of low birth weight babies. The study was conducted in neonatal intensive care unit and obstetric wards of St.John's Medical Hospital; Bangalore. Quasi experimental non equivalent control group design was used. 64 babies were selected using purposive sampling technique,

and they were assigned randomly to experimental (n=32) and control (n=32) group. Newborns in the control group received routine nursing care whereas newborns in the experimental group received routine nursing care as well as 5minutes of coconut oil massage twice a day. The oil massage was given for a period of 5 consecutive days. At the end of 5 days newborns weight and neuro behaviors were assessed. The neurobehaviors like habituation, attention, arousal, regulation and handling, quality of movements, excitability, lethargy, non- optimal reflexes, asymmetric reflexes, hypotonicity and stress abstinence were assessed using Modified Brazelton Newborn Behavior Assessment Scale. The study concluded that ($t = 6.8$ at $p< 0.05$ level) coconut oil is effective in improving the neurobehavioral changes which can be accurately assessed using Brazelton Newborn Behavior Assessment Scale.

Kestermann.G, (2002) conducted a study in Germany on newborns. The objective of the study was to assess the individual differences among healthy newborn on the Brazelton Scale. 125 newborns with the age of 3rd day to 8th day were selected. It was concluded that the extent of variability measures with Brazelton Scores were determined by the relative mean information value, which indicates the discriminating power of the scale.

Kek Khee Loo, Hunglin Zhu, Lihua Min, (2002) conducted a study in Sichuan provincial people's hospital, China. The objective of the study is to determine the maternal confidence in China in association with infant neuro behaviors which is assessed using Brazelton Newborn Behavioral Assessment Scale. The scale was administered on 40 healthy full term newborns. It was concluded that the newborns ability to tolerate stimuli, and to be consoled, were associated with maternal confidence which was accurately assessed with Brazelton Newborn Behavioral Assessment Scale.

Christina Ludquist, and Kart Goran, (2002) conducted a study in Lund University and boras hospital, UK to determine whether Brazelton newborn Behavioral Assessment scale can detect behavioral differences in newborns of optimal health and if such differences appear, also detect gender differences among the neonates. For this study neonates of 3 days old were selected by convenience sampling technique, out of which 20 were males and 18 were females. It was concluded that a baby may be healthy and seem strong and robust yet may also be vulnerable. Even the healthy babies had difficulties in self regulation and therefore be hard to interact with. The study indicated that the Brazelton Newborn Behavioral Assessment scale detects behavioral differences among optimally healthy infants. The study findings revealed that there are behavioral differences between girls and boys. The girls had higher functioning scores especially in the social interactive organization cluster.

Rina Das Eiden and Alan Reifman, (2001) conducted a study in Newyork, US. The objective of the study was to evaluate the effect of Brazelton demonstrations on later parenting. A Meta analysis approach was used. Only published studies (n=13) were included in this analysis, with one effect size entered for each study. The studies contained total of 668 families, an average of about 51 per study. Effect sizes are reported in terms of the correlation coefficient(r) as well as the difference between experimental and control group mean values were divided by the pooled standard deviations. Analyses were conducted by weighing each study equally and also by sample size. It was concluded that Brazelton based interventions during neonatal period has better beneficial effect on the quality of parenting.

Summary

This chapter dealt with the literature related to selected behavioural responses of newborn in relation with massage, effectiveness of oil massage in newborns and Brazelton Newborn Behavioral Assessment Scale.

CHAPTER III

METHODOLOGY

The methodology of research indicates the general pattern of organizing the procedure for gathering valid data for the purpose of investigation. **(Polit and Hungler, 2003)**

The present study aims to evaluate the effectiveness of oil massage on selected behavioral responses among normal newborns in selected urban areas, Salem.

Research Approach

Quantitative evaluative research approach was adopted for this study.

Research Design

Quasi experimental involves the manipulation of an independent variable. Quasi experiments lack either randomization or control group feature that characterizes true experiments. **(Polit and Hungler, 2003)**

Quasi experimental (pre and post- test control group design) was used in this study, to evaluate the effectiveness of oil massage on selected behavioral responses among normal newborns.

E	**O_1**	**X**	**O_2**
C	**O_1**		**O_2**

E: Experimental group.

C: Control group.

O_1: Pre test on behavioral responses.

X: Oil massage

O_2: Post test on behavioral responses.

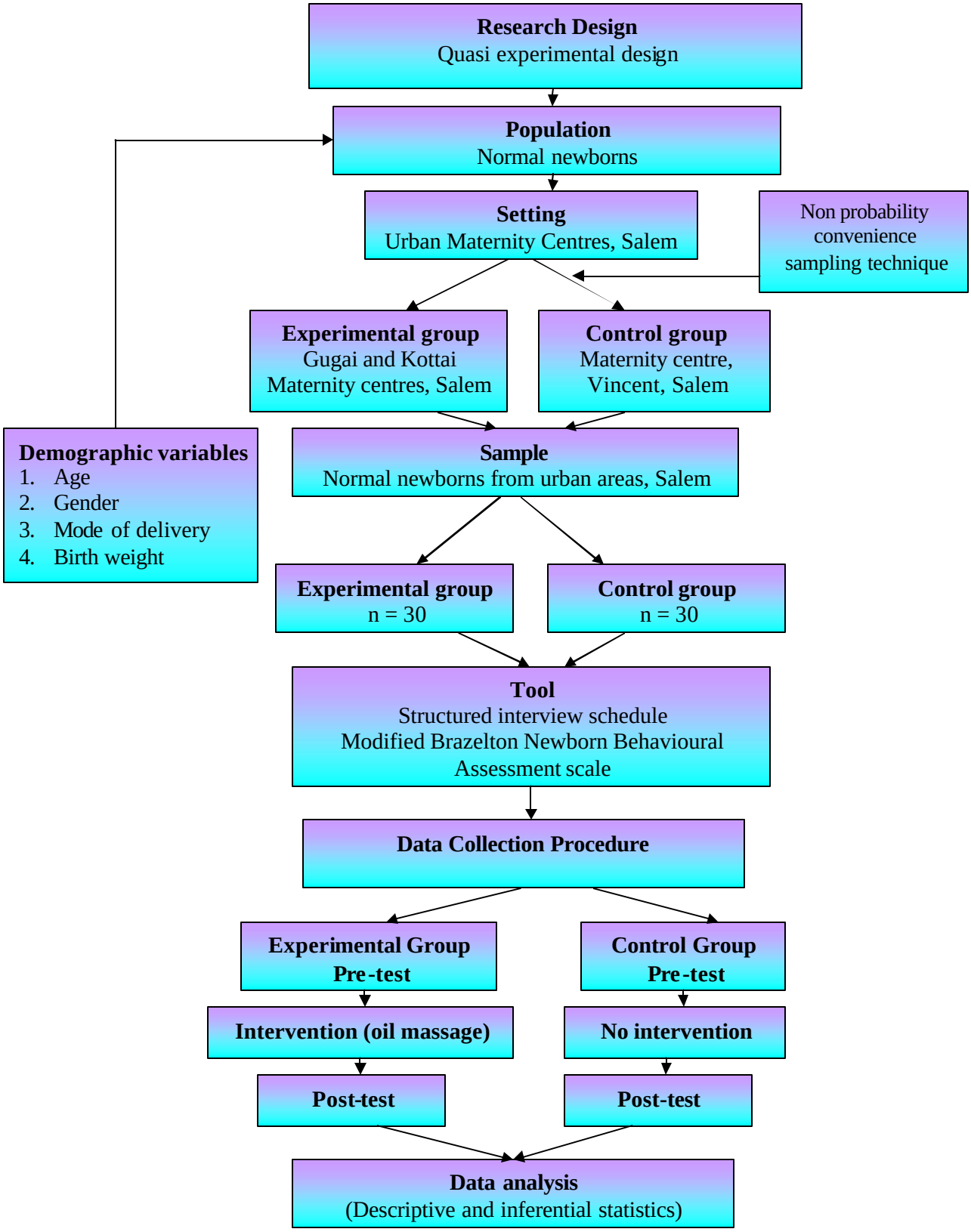

Figure -3.1: Schematic Representation of Research Methodology

Population

The population under this study includes all normal newborns. The normal newborns were selected depending on the availability and who fulfill the inclusive criteria.

Description of the Setting

Setting is the location and condition in which data collection takes place for the study. **(Polit and Hungler, 2003)**.

The newborns were selected from maternity centres Gugai, Kottai, and Vincent. Gugai is 5 kms and Kottai is 6 kms and Vincent is 8 kms away from Sri Gokulam College of Nursing. The investigator visited the newborns in their respective houses.

Sampling

Sampling refers to the process of selecting the portion of population to represent the entire population. **(Polit and Hungler, 2003)**

- Sample:

Sample of the study was normal newborns of selected urban areas, Salem.

- Sample Size:

Sample size was 60 normal newborns 30 in experimental group and 30 in control group.

- Sampling technique:

The samples were selected using Nonprobability convenience sampling technique.

✍ Criteria for selection of sample

Inclusive criteria:

Newborns

? born after 37 weeks of gestational age.

? born by normal vaginal delivery with or with out episiotomy.

? with the birth weight above 2500 grams.

? from 3-28 days of life.

Exclusive criteria:

Newborns

? mother who are not willing to participate in the study.

? with medical illness.

? born as twins.

? born with congenital abnormalities.

Variables

Independent variable – oil massage.

Dependent variable – selected behavioral responses.

Extraneous variables- age in days, gender, mode of delivery, and birth weight in grams.

Description of Tool

The structured interview schedule was prepared by the investigator after an extensive study of the related literature and with the guidance of experts.

The tool for collection of data consists of two sections. Section A and Section B.

Section-A: The structured interview schedule was used to collect demographic variables such as age in days, gender, mode of delivery, and birth weight in grams.

Section-B: It consists of Modified Brazelton's Newborn Behavioral Assessment Scale to assess the selected behavioral responses of normal newborns like sleep wake states, crying spells, feeding pattern and motor system development. The Modified Brazelton's Newborn Behavioral Assessment Scale consists of 10 components. Each component was given maximum score of 3 and minimum score of 1.

Total score was 30.

10 - 20 : Satisfactory response

21-30 : Good response

Validity and Reliability of the Tool

Validity:

Validity refers to the degree to which an instrument measures what it is supposed to be measured. **(Polit and Hungler, 2003)**

Validity of the tool was established with the consultation of the guide and experts. The tool was validated by one Medical Expert in the field of Obstetrics and Gynecology, five Nursing Experts and One Physiotherapist. The tool was found adequate and minor suggestions in demographic variables given by the experts were incorporated.

Reliability:

Reliability of an instrument is the degree of consistency with which an instrument measures an attribute **(Polit and Hungler, 2003)**

Reliability of the tool was established by implementing the tool on 6 mothers of normal newborns among which three were experimental and three were control group. The reliability was established by Split Half method using Spearman's Brown formula and it was found $r^1 = 0.95$, which indicates reliability of the tool. Hence the tool was considered for proceeding.

Pilot Study

The researcher conducted the pilot study by collecting addresses from Saraswathi Maternity Centre, Salem from 07. 06.10 to13.06.10. 6 samples from 3- 28 days of life were selected by non-probability convenience sampling method. Oral consent was obtained from the mother's of newborns. Pre-test was conducted for experimental and control group using Modified Brazelton's Newborn Behavioral Assessment Scale. Oil massage was given to the newborns from experimental group for 5 days. On the 5th day post-test was conducted for the experimental and control group using Modified Brazelton's Newborn Behavioral Assessment Scale. The researcher did not find any difficulties during the pilot study. Hence it was continued in main study.

Method of Data Collection

Ethical consideration:

Written consent was obtained from the mothers of newborn, who are willing to participate in the study.

Period of data collection:

The data was collected after obtaining prior permission from the mothers of newborn to conduct the study, in the month of July from 05.07.2010 to 31.07.2010, for a period of four weeks.

Data collection procedure:

Consent was obtained from the City Health Officer and the respective Medical Officers of Maternity Centers (Vincent, Gugai and Kottai). The researcher collected addresses from Vincent, Gugai and Kottai Maternity Centers, and visited the samples at their respective houses. The samples from Vincent Maternity Centre were selected for the control group and samples from Gugai and Kottai Maternity Centers were selected for experimental group. For the first two weeks pre test was conducted for the control and experimental group. On the first day researcher performed oil massage for the newborn using pure coconut oil for about 10-15 minutes except the face, head and palms, this was observed by the mother and the caregiver at home. On the second day mother was asked to perform oil massage and the researcher ensured the correctness of the procedure by using checklist consisting of the steps of procedure. The same check list was given to the care giver also. Inter observer reliability was established On the third day onwards the caregiver was asked to check the correctness of the procedure using the checklist. After oil massage the mother was encouraged to wrap the newborn using a thin cloth and expose under the sunlight for about 30 minutes and then give bath. The mother was asked to continue oil massage daily for 15 days. The researcher made four to five visits to make sure the mother is performing the procedure. On the 15^{th} day post test was done for both control and experimental group using Modified Brazelton's Newborn Behavioural Assessement Scale.

Plan for Data Analysis

A master data sheet will be prepared with the response given by the samples mother and the data will be analyzed using statistical methods such as descriptive

analysis using frequency and percentage distribution and inferential analysis using mean, standard deviation, independent 't' test and chi-square.

Summary

This chapter consists of research approach, research design, population, description of the setting, sampling, variables, and description of the tools, validity and reliability, pilot study, method of data collection, and plan for data analysis.

CHAPTER 1V

DATA ANALYSIS AND INTERPRETATION

Analysis is a process of organizing and synthesizing data in such a way that questions can be answered and the hypothesis can be tested **(Polit and Hungler, 2003)**

This chapter deals with the description of oil massage on selected behavioral responses of new born. Data was collected from 60 samples (30- experimental group and 30 control group) at selected urban areas of Salem. Quasi experimental pre and post test design was used. The samples were selected using Non Probability convenience sampling technique. Oil massage was given to the experimental group once a day for 15 days. Whereas the oil massage was not given to the control group. At the end of 15^{th} day post test was done for both experimental and control group. The collected data were organized, coded, calculated and analyzed as per objectives of the study under the following headings:

Section-A: Distribution of samples according to their selected demographic variables in experimental and control group.

Section-B: Pre-test assessment of selected behavioural responses among samples in experimental and control group.

Section-C: Comparison of mean difference of selected behavioral responses among samples in experimental and control group.

Section-D: Hypotheses Testing

a. Effectiveness of oil massage on selected behavioral responses among samples in experimental and control group.

b. Association of selected behavioral responses with their selected demographic variables in experimental and control group.

SECTION – A

Distribution of samples according to their selected demographic variables in experimental and control group

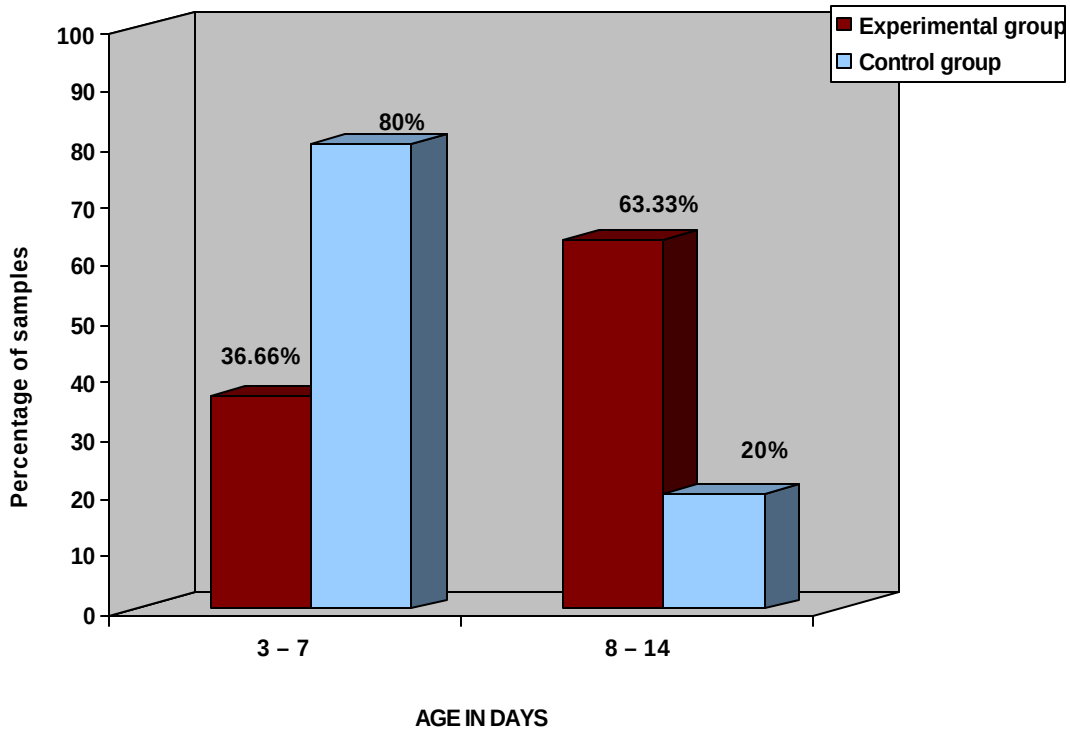

Figure -4.1: Percentage distribution of samples according to their Age in days in experimental and control group.

The above figure on distribution of samples in experimental and control group according to their age shows that 19 (63.33%) of samples in experimental group belongs to 8-14 days and 11 (36.66%) of samples belongs to 3-7 days, whereas in control 24 (80%) of samples belongs to 3-7 days and 6 (20%) of samples belongs to 8-14 days.

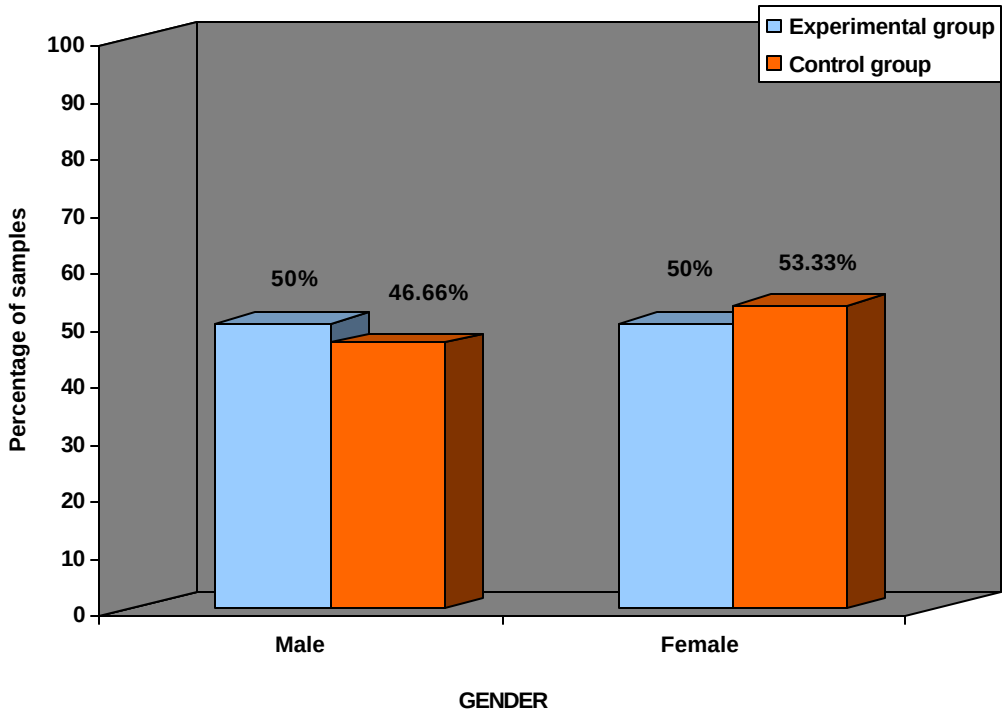

Figure -4.2: Percentage distribution of samples according to the Gender in experimental and control group.

The above figure on distribution of samples in experimental and control group according to their gender shows that 15 (50%) of samples were males and 15 (50%) of samples were females in experimental group, whereas in control group 16 (53.33%) of samples were females, and 14 (46.66%) of samples were males.

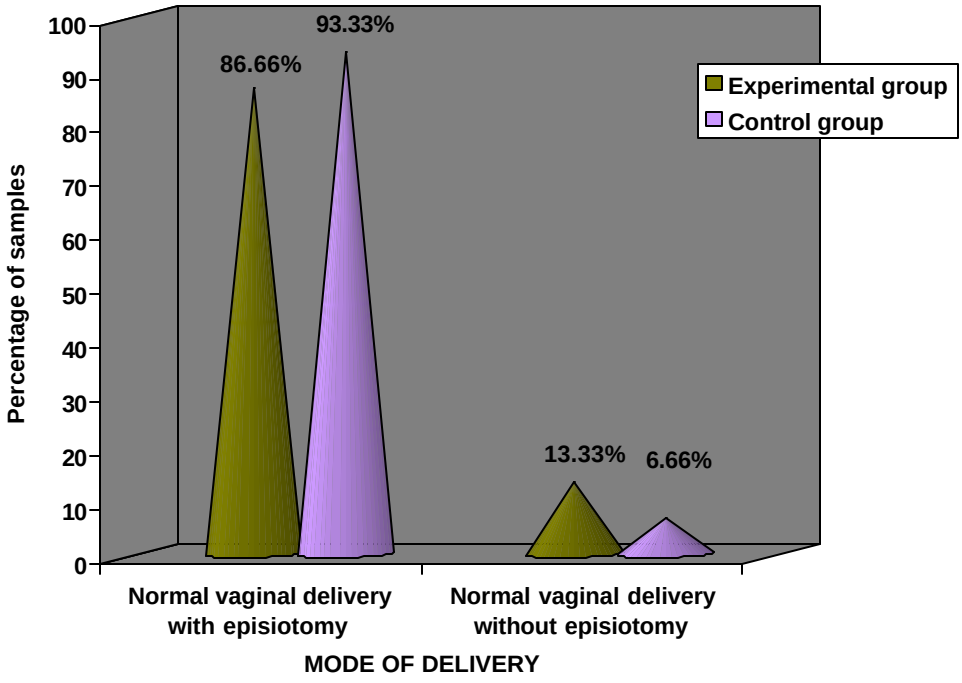

Figure -4.3: Percentage distribution of samples according to the Mode of delivery in experimental and control group.

The above figure on distribution of samples in experimental and control group according to the mode of delivery shows that 26(86.66%) of samples in experimental group were born by normal vaginal delivery with episiotomy and 4(13.33%) of samples were born by normal vaginal delivery without episiotomy, whereas in control group 28(93.33%) of samples were born by normal vaginal delivery with episiotomy and 2(6.66%) of samples normal vaginal delivery without episiotomy.

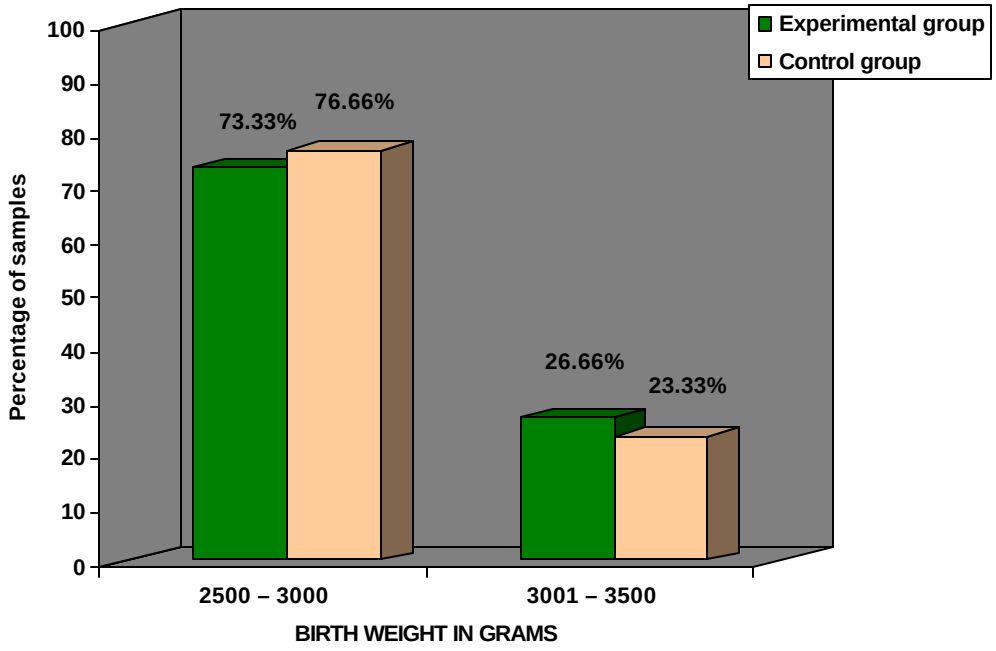

Figure -4.4: Percentage distribution of samples according to their Birth weight in grams in experimental and control group.

The above figure on distribution of samples in experimental and control group according to the birth weight shows that 22 (73.33%) of samples in experimental group were born with the birth weight of 2500-3000 grams and 8 (26.66%) of samples were born with the birth weight of 3001-3500 grams, whereas in control group 23 (76.66%) of samples were born with birth weight of 2500-3000 grams and 7 (23.33%) of samples were born with the birth weight of 3001-3500 grams.

Section- B

Pre-test Assessment of Selected Behavioural Responses among Samples in Experimental and Control Group

Table-4.1:

Pre-test mean, Standard Deviation, and mean score percentage of area wise assessment on selected behavioral responses of samples in experimental and control group.

n = 60

S.No	Selected behavioral responses	Maximum score	Experimental Group n = 30			Control group n = 30		
			Mean	SD	Mean Score %	Mean	SD	Mean Score %
1	Sleep wake states	12	7.33	0.96	61.08	7.8	1.99	65
2	Crying spells	6	4	0.51	66.67	4.36	0.55	72.66
3	Feeding pattern	9	6.03	0.82	67	5.63	0.9	62.5
4	Motor system development	3	1.94	0.42	64.3	1.93	0.15	64.3

The above table (4.1) findings reveal that in experimental group the highest mean score 67% (6.03±0.82) was obtained in the area of feeding pattern and the lowest mean score 61.08 % (7.33±0.96) was obtained in the area of sleep wake states. Where as in control group, the highest mean score 72.66% (4.36±0.55) was obtained in the area of crying spells and the lowest mean score 62.5 % (5.63±0.9) was obtained in the area of feeding pattern.

Table-4.2:

Frequency and percentage distribution of samples according to their selected behavioural responses in experimental and control group.

n=60

S. No	Selected behavioral responses	Experimental group				Control group			
		Pre-test		Post-test		Pre-test		Post-test	
		f	%	f	%	f	%	f	%
1	Satisfactory response	23	76.6	-	-	20	66.6	21	70
2	Good response	7	23.3	30	100	10	33.3	9	30

The above table-4.2 shows that in experimental group 23(76%) samples had satisfactory response in pre-test and 30(100%) had good response in post-test, whereas in control group 20(66.6%) samples had satisfactory response in pre-test and 21(70%) had satisfactory response in post-test.

Section – C

Comparison of Pre and post-test of Selected Behavioral Responses Among Samples in Experimental and Control Group.

Table-4.3:

Comparison of area wise mean, Standard Deviation, mean score percentage and post test difference in mean percentage on selected behavioral responses of samples in experimental and control group.

n=60

Selected behavioral responses	Max. score	Experimental group (n=30)						Control group (n=30)						Post test difference in mean %
		Pre-test			Post-test			Pre-test			Post-test			
		Mean	SD	Mean score %	Mean	SD	Mean score %	Mean	SD	Mean score %	Mean	SD	Mean score %	
Sleep wake states	12	7.33	0.96	61.08	11.06	1	92.16	7.8	1.99	65	7.63	0.9	63.59	28.57
Crying spells	6	4	0.51	66.67	4.53	0.53	75.5	4.36	0.55	72.66	4.33	0.51	72.16	3.34
Feeding pattern	9	6.03	0.82	67	8.56	0.87	95.1	5.63	0.9	62.5	5.64	0.73	62.67	32.43
Motor system development	3	1.94	0.42	64.3	2.9	0.3	96.6	1.93	0.15	64.3	2.2	0.4	73.3	23.3

The above table (4.3) shows that, in experimental group the post-test mean score percentage of selected behavioral responses such as, sleep wake states, crying spells, feeding pattern and motor system development were 92.16, 75.5, 95.1, 96.6 respectively is greater than pre-test mean score percentage 61.08, 66.67, 67, 64.3.

In control group the post-test mean score percentage of motor system development 73.3% is greater than pre-test mean score 64.3%. In other behavioral responses there were no significant changes.

The difference in mean difference of post test among newborns in experimental and control group on selected behavioral responses was highest (32.43%) for feeding pattern and lowest (3.34%) for crying spells. It can be concluded that newborn in experimental group oil massage was effective on selected behavioral responses than the newborns in control group after coconut oil massage.

Section-D

Hypotheses Testing

Table-4.4:

Mean, Standard Deviation, and independent 't' value of oil massage on selected behavioral responses of samples in experimental and control group.

n=60

Variable	Experimental group n = 30				Control group n=30				Post-test 't' value	Table value
	Pre test		Post test		Pre test		Post test			
	Mean	S.D	Mean	S.D	Mean	S.D	mean	S.D		
Selected behavioural responses	19.36	1.44	27.10	1.52	19.7	1.45	19.76	1.29	20.35***	3.29

***Highly significant at p< 0.001 level

The above table-4.4 shows that, in experimental group the mean, standard deviation value of pre – test score was 19.36 ± 1.44 and the mean post-test score was 27.10 ± 1.52. In control group pre-test mean score was 19.7±1.454 and the post-test mean, standard deviation value was 19.76±1.29.

The obtained post-test 't' value 20.35 at p<0.001 level suggest that oil massage had significant effect on the selected behavioral responses of normal newborns in experimental group. Hence H_1 is retained.

Table-4.5:

Association of selected behavioral responses with selected demographic variables in experimental group

n=30

Demographic variables	Selected behavioral responses - Experimental group																			
	Frequency of sleep		Sleep duration of each episode		States of sleep		Sleep awakening state		Type of cry		Consolability		Frequency of feeding		Duration of feeding		Number of voiding		Activity	
	df	$?^2$	df	$?^2$	df	$?^2$	df	$?^2$	df	$?^2$	df	$?^2$	df	$?^2$	df	$?^2$	df	$?^2$	df	$?^2$
Age	2	2.317	1	0.599	2	0.277	2	5.521	2	3.701	1	0.016	2	1.347	2	5.426	2	1.432	2	2.887
Gender	2	2.143	1	1.034	2	2.848	2	1.048	2	2.143	1	0.370	2	4.615	2	0.373	2	0.377	2	4.615
Mode of delivery	2	6.820 *	1	0.159	2	0.824	2	1.360	2	0.330	1	1.154	2	5.370	2	0.923	2	8.428*	2	2.596
Birth weight	2	5.893	1	2.845	2	0.548	2	0.931	2	0.779	1	1.212	2	6.399*	2	3.273	2	0.078	2	3.485

***** Significant at $p< 0.05$ level

The above table (4.5) shows that in experimental group there is significant association found between the selected behavioral responses such as frequency of sleep, number of voiding, and frequency of feeding with their selected demographic variables such as mode of delivery and birth weight. There is no association between other behavioral responses with their selected demographic variables. Hence H_2 is rejected except for the variables frequency of sleep, number of voiding, and frequency of feeding, where it is retained.

Table-4.6:

Association of selected behavioral responses with selected demographic variables in control group

n=30

Demographic variables	Selected behavioral responses - Control group																			
	Frequency of sleep		Sleep duration of each episode		States of sleep		Sleep awakening state		Type of cry		Consolability		Frequency of feeding		Duration of feeding		Number of voiding		Activity	
	df	$?^2$	df	$?^2$	df	$?^2$	df	$?^2$	df	$?^2$	df	$?^2$	df	$?^2$	df	$?^2$	df	$?^2$	df	$?^2$
Age	1	0.259	2	1.094	2	2.140	2	1.500	1	0.259	1	0.139	2	1.635	2	0.833	1	0.010	2	0.593
Gender	1	1.182	2	0.703	2	0.584	2	1.915	1	0.905	1	3.772	2	2.494	2	0.057	1	0.429	2	1.360
Mode of delivery	1	0.074	2	0.539	2	3.745	2	2.518	1	0.074	1	0.089	2	0.330	2	0.918	1	0.429	2	0.330
Birth weight	1	0.315	2	1.118	2	1.135	2	1.627	1	3.339	1	1.118	2	1.405	2	3.148	1	1.826	2	0.473

***** Significant at $p< 0.05$ level

The above table (4.6) shows that in control group there is no significant association found between the selected behavioural responses with their selected demographic variables. Hence H_2 is rejected.

Summary

This chapter dealt with data analysis and interpretation in the form of statistical values based on the objectives. Here the frequency and percentage was used in samples according to the demographic variables. The independent‘t’ test was used to evaluate the effectiveness of oil massage on selected behavioral responses of newborns. The chi-square test was done to associate the selected behavioural responses among newborns with their selected demographic variables.

CHAPTER – V

DISCUSSION

The experimental study was done to evaluate the effectiveness of oil massage on selected behavioral response among normal newborns in selected urban areas, Salem.

Description of the demographic variables

? In experimental group 19(63.33%) samples belong to age group of 8-14 days and 11(36. 6%) belong to 3-7 days. In control group 24(80%) were belong to the age group of 3-7 days.

Luke.C.Mullany. et.al, (2005) conducted a study in Sarlahi district, Nepal. In his study he reported that 99.7% of newborns where in 14 days of life. Newborn period is traditionally designated as the period from birth to one month. During this period, the baby's senses sharpen and develop the process of attachment to social relationships. Newborn need the kind of security, when their bodily needs are satisfied and forms a physical contact with the mother through touch. The neonate responds to various sensations with evidence of pleasure or general discomfort and the sense of touch is the most highly developed of the special senses. Hence the researcher feels that the age group which has been selected for this study is appropriate for massage which will lead to the significant positive changes.

? According to the gender, in experimental group equal and similar percentage 15(50%) of them were males and females, whereas in control group more or less similar percentage of them 16(53.33%) were females and 14(46.66%) of them were males.

These findings were supported by **Bobby Rita Jancy, (2006)** in her study she reported that 46 (71.87%) of them were males and 18(28.12%) were females. According to **Ministry of Home Affairs, India (2009)** the sex ratio at birth is 1.12 males / female. Due to the small sample size of this study the male and female ratio doesn't coincide with the census of Ministry of Home Affairs, India**.**

? Based on mode of delivery in experimental group 26(86.66%) and in control group 28(93.33%) of them were born by normal vaginal delivery with episiotomy

Episiotomy is performed to enlarge the vaginal introitus to facilitate easy and safe delivery of fetus and to minimize overstretching and rupture of perineal muscles and facia and it also reduces the stress and strain on the fetal head. This also helps in the reduction of duration of second stage and minimizes intracranial injuries in newborns.

In 2009, a Cochrane meta- analysis based on studies with over 5000 women reported that restrictive episiotomy policies appear to have a number of benefits compared to policies based on routine episiotomy. There is less posterior perineal trauma, less suturing and fewer complications, but there was an increased risk of anterior perineal trauma with restrictive episiotomy. Considering all the above said advantages of episiotomy the researcher found that the samples selected were also born with normal vaginal delivery with episiotomy.

? According to birth weight, in experimental group 22(73.33%) of them were born with the birth weight of 2500-3000grams and in control group 23(76.66%) of them were born with the birth weight of 2500-3000 grams.

The birth weight is very much variable from country to country but usually exceeds 2500 grams. In India the weight varies between 2.7 to 3.1 kg with a mean of 2.9 kgs. The researcher found that in this study most of the samples were born with the birth weight of 2500 – 3000 grams.

The first objective of the study was to assess the behavioral responses among normal newborns in experimental group.

In pre-test the experimental group had highest mean score 67% (6.03 ? 0.82) in the area of feeding pattern and the lowest mean score 61.08% (7.33 ? 0.96) in the area of sleep wake states. Whereas in the control group the pre-test highest mean score 72.66% (4.36 ? 0.55) was obtained in the area of crying spells and lowest mean score 62.5% (5.63 ? 0.9) was obtained in the area of feeding pattern.

The reaction of the neonate to internal and external stimuli is manifested in state-related behavior. The newborn may exhibit the behavioral responses like quiet or regular sleep, rapid eye movement, sleep or minimal muscular movement with irregular respirations and eyelids closed. They will have good crying spells and they will be fussier until their needs are met.

The nurse who recognizes the various states of neonates can use her knowledge to change them by providing tactile stimulation and auditory stimulation. Nurses can also teach parents the use of these various techniques before they assume complete responsibility for the care of their newborn at home.

The second objective of the study was to evaluate the effectiveness of oil massage on selected be havioral responses of experimental and control group.

After the application of oil massage for 15 days the pre and post–test assessment the mean difference of selected behavioural responses were obtained as 28.57, 3.34, 32.43, and 23.3 The oil massage is highly significant at $p<0.05\%$ level.

The independent't' test (t = 20.35) between experimental and control group. Hence the stated hypothesis is retained and concluded that oil massage was significantly effective on selected behavioral responses of normal newborns. The present study findings was supported by, **Ramasundari.B, (2008)** in her study she found that the pre and post – test assessment of behavioral responses after application of oil massage as the mean difference 1.8 in sleeping pattern, 1.07 in feeding frequency and 1.06 in crying spell.

Shankar Narayanan, K., et.al, (2004) in his study the behavioural responses of newborn were assessed Brazelton Newborn Behavioual Assessment Scale. The study findings ('t' value 15.3 at $p<0.05$ level) concluded that coconut oil massage was more effective than mineral oil massage.

The researcher observed, as the mother massaged the baby with coconut oil the amount of loving touch increased, the newborn developed knowledge of security, comfort and trust. The mothers also verbalized that newborns slept well, they were less fussy, taking feeds well and had good urine output. Hence coconut oil is considered the finest oil for massaging the baby might have improved the selected behavioral responses of samples.

The final objective of the study was to associate the selected behavioural responses of experimental group with their selected demographic variables.

There was significant association between the selected behavioural responses such as frequency of sleep, number of voiding and frequency of feeding and selected demographic variables like mode of delivery and birth weight. Whereas in control group there was no association between the selected behavioural responses with their selected variables.

It is found that when the baby is fed with breast milk it provides neonate with a passive means of protection from the environment. Newborns who are breast fed are less likely to have gastro intestinal disorders and food allergies. When the newborn takes regular breast feed they are satisfied, sleep well, cry less and have a good urine output.

As the baby passes through the birth canal they experience stress and trauma. In this study most of the samples were born by normal vaginal delivery with episiotomy, which reduces the stress and trauma experienced by the sample during the process of delivery. Due to less stress and trauma the samples may be having a good frequency of sleep.

The researcher also feels that since most of the samples from experimental and control group were born wit h the birth weight of 2500 to 3000 grams, they had good sucking ability and good metabolism without any gastro intestinal disturbance which leads to the association between birth weight and frequency of feeding.

Summary

The discussion was made in this chapter based on the objectives of the study and it was related with similar studies conducted by other investigators.

CHAPTER - VI

SUMMARY, CONCLUSION, IMPLICATIONS AND RECOMMENDATION

This chapter consists of summary of the study, objectives, major findings, conclusion, implications and recommendations.

Summary

A quasi experimental (pre–post test) design was used to evaluate the effectiveness of oil massage on selected behavioral responses among 60 normal newborns selected by Non probability convenience sampling technique. Modified Brazeltons Newborn Behavioral Assessment Scale was used to assess the selected behavioral responses. The data collected were analyzed by using descriptive and inferential statistics. The conceptual framework for the study was based on Kathryn. E.Bernard Parent Child Interaction Theory.

Major Findings of the Study

- In experimental group 19(63.33%) samples belong to 8-14 days and 11(36.6%) belong to 3-7 days. In control group 24(80%) were belong to the age group of 3-7 days and 6 (20%) of samples belong to 8-14 days.
- According to the gender, in experimental group 15(50%) of samples were males and 15(50%) of samples were females, whereas in control group 16(53.33%) of samples were females and 14(46.66%) of them were males.
- Based on mode of delivery in experimental group 26(86.66%) of them born by normal vaginal delivery with episiotomy whereas in control group 28(93.33%) of them born by normal vaginal delivery with episiotomy.
- According to birth weight, in experimental group 22(73.33%) of them were born with the birth weight of 2500-3000grams and in control group 23(76.66%) of them were born with the birth weight of 2500-3000 grams.

- During pre-test in experimental group the highest mean score 67% (6.03 ? 0.82) was obtained in the area of feeding pattern and the lowest mean score 61.08% (7.33 ? 0.96) was obtained in the area of sleep wake states whereas in the control group the pre-test highest mean score 72.66% (4.36 ? 0.55) was obtained in the area of crying spells and lowest mean score 62.5% (5.63 ? 0.9) was obtained in the area of feeding pattern.
- During post-test in experimental group the highest mean score 96.6% (2.9 ? 0.3) was obtained in the area of motor system development and the lowest mean score 75.5% (4.53 ? 0.53) was obtained in the area of crying spells, whereas in the control group the post-test highest mean score 73.3% (2.2? 0.4) was obtained in the area of motor system development and lowest mean score 62.67% (5.64 ? 0.73) was obtained in the area of feeding pattern.
- After the application of oil massage for 15 days the post – test defference in mean percentage of selected behavioural responses in experimental and control group were obtained as 28.57, 3.34, 32.43, and 23.3.
- The obtained post-test 't' value 20.35 at $p<0.001$ level suggest that oil massage had significant effect on the selected behavioral responses of normal newborns in experimental group. Hence H_1 is retained.
- There was significant association between the selected behavioural responses such as frequency of sleep, number of voiding and frequency of feeding and selected demographic variables like mode of delivery and birth weight. Whereas in control group there was no association between the selected behavioural responses with their selected variables.

Conclusion

Neonatal mortality comprises approximately two-thirds of all deaths worldwide in infants aged less than one year. Ninety-eight percent of these deaths occur in developing countries. Hence it is important to plan for interventions like oil massage which could help in reducing the neonatal mortality. To conclude oil massage is an effective intervention ($t = 20.35$ at $p<0.001$ level) and has significant effect on selected behavioral responses of newborns. There was significant association between selected demographic variables and selected behavioral responses like frequency of sleep, number of voiding and frequency of feeding.

Implications

Nursing service:

- Newborn oil massage could be included in antenatal teaching itself.
- Nurses could provide holistic nursing care using coconut oil massage, which is a simple, low cost and culturally acceptable intervention.
- Nurses could practice evidence based practice nursing with oil massage which is an integral neonatal intervention based on the scientific rationale obtained from various research studies related to touch therapy.
- Nurses should teach patients about the benefits of massage therapy in both physical and psychological aspects.
- Nurses should understand the importance of massage therapy as an adjunct to non-pharmacologic therapy.

Nursing education:

- Nursing curriculum should be updated by including topics like complementary and alternative therapies.
- The curriculum could be responsible for preparing the future nurses with more emphasis on preventive and promotive health care practices.

- Emphasis on education in intervention massages like coconut oil massage as a part of routine postnatal care.
- Periodic conferences, seminars, workshops and symposium can be arranged regarding massage therapy to make nursing professionals competent enough to meet their ever changing needs to the society.
- The nurse educator must be focused on wide aspect of transcultural nursing, cultural aspects regarding infant massage and impinge the attitude towards touch and massage in infants.

Nursing administration:

- The nurse administrator should take more responsibilities to incorporate the importance of holistic care in the newborn care.
- The nurse administrator should motivate the staff nurses to incorporate various simple, cost effective and culturally acceptable forms of complementary therapies like massage therapy along with the routine neonatal care.
- Nursing administrator should organize in service education programme on complementary and alternative therapies for nurses.

Nursing research:

- Nursing researcher should be aware of various innovative methods to reduce and improve behavioral responses of newborns.
- Nurse researcher should be aware about the new trends and existing health care system. Emphasis should be laid on nursing research in the area of cost effective routine newborn care, to enhance their growth and development and to practice evidence based nursing to maximize the optimum care for the clients

Recommendations for further Research

- A similar study can be conducted to evaluate the effectiveness of oil massage on behavioral responses of newborns in rural areas of Salem.
- A similar study can be done using large sample newborns.
- A similar study can be done by giving oil massage more frequently like twice or thrice a day.
- A comparative study can be performed to evaluate the effectiveness of coconut oil massage and massage without using oil.
- A similar study can be conducted to evaluate the effectiveness of coconut oil massage on preterm infants.
- A comparative study can be done to assess the effectiveness of massage therapy individually and in combination with other complementary therapies.
- A similar study can be conducted to evaluate the effectiveness of oil massage on behavioral responses of newborns when the father performs the oil massage.

Summary

This chapter dealt with summary, conclusion, implications for nursing practice and recommendations.

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8. http://fht.shared.hosting.zen.co.uk/mainwebsite/resources/file/baby%20massage%20202006.pdf
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ANNEXURE - A

Letter Seeking Permission to Conduct a Research Study

SRI GOKULAM COLLEGE OF NURSING
3/836, Periyakalam, Neikkarapatti, Salem - 636 010.
Phone : 0427 - 6544550 Fax : 0427 - 2270200, 2447077
Email : sgcon2001@yahoo.com, sgcon2001@gmail.com

Date : 03.07.2010

To

The City Health Officer,
Salem Corporation,
Salem.

Respected Madam,

Sub: Permission to conduct a research study request reg.

This is to introduce **Ms. Anitha Mary Oyasis**, M.Sc., (Nursing) student of Sri Gokulam College of Nursing. She is to conduct Research project which is to be submitted to the Tamil Nadu Dr. M.G.R. Medical University Chennai, in partial fulfillment of University requirements for the award of M.Sc., (Nursing) Degree.

Topic: A Study To Evaluate The Effectiveness of Oil Massage On Selected Behavioral Responses among Normal Newborns in Selected Urban Areas, Salem.

I request you to kindly permit her to conduct the study in the urban areas of Salem from 05-07-2010 to 31-07-2010. She will adhere to the Policies and Regulations.

Thanking you

Yours sincerely,

3/7/10

(Prof.A.Jayasudha)

PRINCIPAL
Sri Gokulam College of Nursing.
3/836, Periakalam, Neikkarapatti.
SALEM - 636 010

ANNEXURE - B

Tool for data Collection

Instruction to the mothers of normal newborn

This section consists of personal information and you are requested to give your response. The data given by given by you will be maintained confidentially.

SECTION - A

Structured Interview Schedule to Assess the Demograhic Data

Sample No: ☐
Date: ……...

1. Age in days
   (a) 3-7 ✍
   (b) 8-14 ✍
   (c) 15-21 ✍
   (d) 22-28 ✍

2. Gender
   (a) Male ✍
   (b) Female ✍

3. Mode of delivery
   (a) Normal vaginal delivery with episiotomy ✍
   (b) Normal vaginal delivery without episiotomy ✍

4. Birth weight in grams
   (a) 2500 – 3000 ✍
   (b) 3001 – 3500 ✍
   (c) 3501 and above ✍

SECTION - B

Modified Brazelton's Newborn Behavioral Assessment Scale

Description of the Tool

Section-B consists of Modified Brazelton's Newborn Behavioral Assessment Scale. This tool is used to evaluate the effectiveness of oil massage on selected behavioral changes among normal newborns in selected urban areas, Salem.

Instruction

The instructor will conduct a structured interview using 3 point rating scale. The scoring is done based on the care givers (newborns mother) response.

S. No	Behaviors	Score	Put a tick (✍) against the response reported
A.	**SLEEP WAKE STATES**		
1.	Frequency of sleep		
	a. 4-5 times /day	1	
	b. 6-7 times / day	2	
	c. 8-9times / day	3	
2.	Sleep duration of each episode		
	a. Less than 1 hour	1	
	b. 1 - 2 hours	2	
	c. More than 2 hours	3	
3.	States of sleep		
	a. Sleeps intermittently	1	
	b. Restless with irregular respirations	2	
	c. Sleeping quietly with easy respirations	3	
4.	Sleep awakening state		
	a. Startle to mild external stimuli	1	
	b. Winces while sleeping	2	
	c. No startle to external stimuli	3	

B.	**CRYING SPELLS**		
5.	Type of cry		
	a. High pitched cry	1	
	b. Irritable cry	2	
	c. Loud cry	3	
6.	Consolability		
	a. To cuddliness	1	
	b. To external stimuli	2	
	c. Spontaneous	3	
C.	**FEEDING PATTERN**		
7.	Frequency of feeding		
	a. Less than 6 times / day	1	
	b. 7-8 times / day	2	
	c. More than 9 times / day	3	
8.	Duration of feeding		
	a. Feeds 5- 10 minutes / feed	1	
	b. 10 – 15 minutes / feed	2	
	c. More than 15 minutes / feed	3	
9.	Number of voiding		
	a. Less than 6 times / day	1	
	b. 7- 8 times / day	2	
	c. More than 9 times / day	3	
D.	**MOTOR SYSTEM DEVELOPMENT**		
10.	Activity		
	a. Mild activity (Drowsy)	1	
	b. Moderate activity of extremities (Quiet alert)	2	
	c. Active movement of extremities (Active alert	3	
	TOTAL SCORE	**30**	

Score interpretation:

Maximum score - 30 Minimum score - 10

10 – 20 - Satisfactory response 21-3- Good response

Oil Massage Procedure

Content of the Procedure

Type of oil	**:** Pure Coconut oil
Duration	**:** 10-15 minutes
Frequency	**:** Daily once before bath for 15 days
Place of massage	**:** Individual newborns house

Definition

It refers to the method of massage using coconut oil by stroking, rubbing and kneading all over the body of the normal newborn except the face and palm for about 10-15 minutes a day.

Importance of Massage

- The blood circulation below the skin and in the muscles is stimulated.
- Massage brings more oxygen to tissues and they are revitalized.
- It increases the rate of metabolism
- The oil that seeps through the skin keeps the skin soft, smooth and moist by not letting moisture escape.
- The oil collected under the skin, when reacts with sunlight, also aids formation of Vitamin-D.

Advantages of Coconut Oil Massage

- It is a very stable oil.
- The presence of expert anti microbial agents like Capric Acid and Lauric Acid do not let microbes infect the skin.
- The presence of coconut oil over the skin does not let moisture escape, thus protecting it from drying and cracking.
- Coconut oil is rich in Vitamin-E, it keeps the skin rejuvenated, young and healthy.
- Coconut oil penetrates the skin very easily while massaging.
- The fragrance is unmatched. It is so earthly and soothing that it keeps the baby fresh all the day and drives away body odour.

Articles Required

- 10 ml pure coconut oil
- Makintosh
- Bowl
- Thin cotton cloth

Steps of Procedure

- Explain the procedure to the mother.
- Empty the 10 ml packed coconut oil into the small bowl.
- Spread the mat on the floor and sit comfortably.
- Undress the newborn and place on the makintosh in supine position.
- Before beginning the massage, massager should relax and pour the coconut oil into the palms and rub them against the each other to make it warm.

Massage the Legs

- Gently hold the newborns leg by the ankle with your left hand and start stroke from the ankle joint, move towards the knee joint along the outside of the leg till the thigh.
- Use the other hand and do the same stroke for the inner aspect of the leg.
- Follow the same steps for the other leg.
- Hold his foot in the hand and use the thumb of right hand on newborn sole and make a circular motion from heal and move towards toe.
- Follow the same steps for the other foot.

Massage the Abdomen

- Move both the hands along the legs towards abdomen and keep the hands on the abdomen.
- Support the newborn with your left hand.
- Use your right hand and start massaging the abdomen from the massagers left side to right side in a circular motion in clock wise direction.

gFjp - m

Fwpg;G:

,e;j gFjpapy; cs;s cq;fs; nrhe;j tpguq;fSf;F rhpahd tpilaspf;FkhW Nfl;Lf; nfhs;fpNwd;. ePq;fs; jUk; tpguq;fs; ,ufrpakhf itj;Jf; nfhs;sg;gLk;.

gq;Nfw;gth; vz;:

1. taJ ehl;fspy;

   m) 3 - 7 ( )

   M) 8 - 14 ( )

   ,) 15 - 21 ( )

   <) 22 - 28 ( )

2. ghypdk;

   m) Mz; ( )

   M) ngz; ( )

3. gpurtKiw

   m) gpwg;GWg;ig mfyg;gLj;jp Rfg;gpurtk; ( )

   M) gpwg;GWg;ig mfyg;gLj;jhky; Rfg;gpurtk; ( )

4. gpwg;G vil (fpuhk;)

   m) 2500 - 3000 ( )

   M) 3001 - 3500 ( )

   ,) 3501f;F Nky; ( )

v z n z a krh[

khj‌ph‌ v z :

t. v z	to‌Kiwfs																
		Mk	,yiy	Mk	,yiy	Mk	,yiy	Mk	,yiy	Mk	,yiy	Mk	,yiy	Mk	,yiy	Mk	,yiy
1	ghia t‌ph‌jJ Foeijia mj‌y gLff itffTk																
2	xU r‌pw‌a f‌z z jj‌y 5-10 k‌yy‌ msty Njqfha v z n z ia vLjJfnfhssTk.																
3	Foeijia‌d cilfis fow‌p t‌lL ,uggh rlby gLff itffTk																
I. 4	fhyfis krh[nraAk Kiwfs Foeija‌d Koqfhiy ,lJifa‌y g‌bjJfnfhzL fZffhy‌y ,UeJ Koqfhy kwWk njhiltiu nts‌gGwkhf krh[nraaTk																
5	mij njhlheJ clGwkhf tyJ ifa‌y krh[nraaTk																
6	,ej nraKiwia kwnwhU fhy‌Yk nraaTk																
7	Foeija‌d ghjjij ifa‌y g‌bjJfnfhzl tyJ ifa‌d ngUt‌uyhy fo‌UeJ Nkyhf Rowr‌Kiwa‌y krh[nraaTk																
8	mNj NghdW kwnwhU ghjjj‌Yk nraaTk																
II 9	ta‌wWgFj‌ia krh[nraAk Kiw Foeija‌d ,uzL iffisAk krh[nragth‌d tyJ ifa‌dhy g‌bjJf nfhssTk																
10	krh[nragth‌d tyJ ifia Foeijia ,lJ Gwkhf itjJ Rowr‌ Kiwa‌y krh[nraaTk																

t. v z	to¡K i w f s	M k	, y i y	M k	, y i y	M k	, y i y	M k	, y i y	M k	, y i y	M k	, y i y	M k	, y i y	M k	, y i y
l l l 11	neQR gFj¡i a krh[nraAk K i w ta¡wW gFj¡ KbejTl d krh[nragth¡d i f f i s Foeija¡d neQr¡d ikag gFj¡a¡y i t f f Tk. g¡dG c s Gwk¡UeJ n t s¡gGwkhf krh[nraaTk.																
l V 12	i f f i s krh[nraAk K i w Foeija¡d ,lJ i f i a krh[nragth¡d ,lJ i fahy g¡bjJf nfhz L n t s¡gGwkhf k z¡f f l by¡UeJ Njhsgl i l t i u NjajJ t¡lTk																
13 14	mNj NghdW tyJ i fahy Foeija¡d ,lJ i f i a g¡bjJfnfhz L c lGwkhf k z¡f f l by¡UeJ Njhsgl i l t i u NjajJ t¡lTk ,ej nraK i w i a kwnwhU i f f Fk nraaTk.																
V 15	K J i f krh[nraAk K i w Foeijia FgGw gL f f i t jJ j i y i a xUGwkhf j¡Ugg¡f nfhss Tk.																
16	c s s q i fa¡dhy fo ,Lgg¡y¡UeJ fOjJ gFj¡ t i u Rowr¡ K i wa¡y krh[nraaTk.																
17	ngU t¡uyhy Gl l j i j nkJthf Rowr¡ K i wa¡y mOj j¡ mOj j¡ t¡lTk																
18	g¡dG Foeijia Neuhf gL f f i t f f Tk																
19	Foeijia nkyy¡a J z¡a¡dhy Rww¡ ,sk nta¡y¡y 30 e¡k¡lqfs fhlba g¡wF Fs¡f f i t f f Tk																

rkkej gbtk

nryt‰. M. md‰jh Nkh‰ xahr‰] Mf‰a ehd =NfhFyk nrt‰y‰ah fyY}h‰a‰y ,uzlhk MzL KJfiy nrt‰y‰ah gllggbgG ga‰dW tUf‰Nwd.vdJ gbgg‰d xUgFj‰ahd Muharr‰fF ‘3 Kjy 28 ehs tiu css grr‰sk FoeijfSfF vznza krh[nrajy kwWk nraKiwiaf Fw‰jJ t‰th‰ff csNsd. vdNt vdJ Muharr‰fF khj‰h‰fshf ,UeJ cjt‰ nraAkhW jhoikAld NflLfnfhs f‰Nwd. Nrfh‰ffggLk t‰guqfs ,ufr‰akhfg ghJfhffggLk kwWk ,it midjJk Muharr‰fF klLk gadgLjjggLk vdW cWj‰as‰ff‰Nwd.

,ggbfF›
M.md‰jh Nkh‰ xahr‰]

vznza krh[nrajy kwWk nraKiwfisggww‰ nryt‰. M. md‰jh Nkh‰ xahr‰] mthfs‰d %yk edF mw‰eJf nfhzNld. vdNt mtuJ Muharr‰a‰y khj‰h‰ahf ,UeJ cjTNtd vd cWj‰as‰ff‰Nwd

,ggbfF
gqNfwgth

ANNEXURE - C

Letter Requesting Opinion and Suggestions of Experts

For Content Validity of the Research Tools

From

Anitha Mary Oyasis. A

Final Year M.Sc (N)

Sri Gokulam College of Nursing

Salem

To

Respected Sir / Madam

Sub: Requesting opinion and suggestions of experts for content validity of the research tools

I, **ANITHA MARY OYASIS.A**, Final Year M.Sc (N) student of Sri Gokulam College of Nursing, Salem. I have selected the topic mentioned below for the research project to be submitted to The Tamilnadu Dr.M.G.R.Medical University, Chennai for the partial fulfillment of Master's Degree in Nursing.

Topic: "A Study to Evaluate the Effectiveness of Oil Massage on Selected Behavioral Responses among Normal Newborns in Selected Urban Areas, Salem".

I wish to request you kindly validate the tool and give your expert opinion for necessary modification. I will be grateful to you for this.

Thanking you

Yours sincerely,

Place: Salem **(ANITHA MARY OYASIS. A)**

Date:

ANNEXURE - D

CERTIFICATE OF VALIDATION

This is to certify that the tool developed by **ANITHA MARY OYASIS. A,** Final year M.Sc Nursing Student of Sri Gokulum College of Nursing, Salem (affiliated to Dr.M.G.R. Medical University) is validated and can proceed with this tool and content for the main study entitled "**A Study to Evaluate the Effectiveness of Oil Massage on Selected Behavioral Responses among normal Newborns in Selected Urban Areas, Salem.**

Signature with Date

APPENDIX - E

LIST OF EXPERTS FOR VALIDITY

1. **Dr. Mrs. P. CHELLAMMAL, M.D., D.G.O.,**
   Consultant of Obstetrician & Gynaecologist
   Sri Gokulam Hospital, Salem.

2. **Mrs. RAJESWARI SIVA, M.Sc (N), M. Phil.,**
   Professor
   H.O.D., Department of Community Health Nursing
   Sri Gokulam College of Nursing, Salem.

3. **Mr. KANDASAMY, M.Sc (N), Ph.D.,**
   Associate Professor
   H.O.D., Department of Community Health Nursing
   Sri Gokulam College of Nursing, Salem.

4. **Mrs. LATHA, M.Sc (N).,**
   Professor
   Department of Child Health Nursing
   Sri Gokulam College of Nursing, Salem.

5. **Mrs. THILAGAVATHY, M.Sc (N), Ph.D.,**
   Professor
   Department of Obstetric and Gynaecological Nursing
   Shanmuga College of Nursing, Salem.

6. **Mrs. KAVITHA, M.Sc (N)**
   Professor
   Department of Child Health Nursing
   Shanmuga College of Nursing, Salem.

7. **Mrs. DHARINI,**
   Physiotherapist
   Sri Gokulam Hospital, Salem.

8. **Mrs. NALINI.R, M.Sc (N).,**
   Assistant Professor
   Department of Obstetric and Gynaecological Nursing
   Sri Gokulam College of Nursing, Salem.

9. **Mrs. SHEELA THERES, M.Sc (N).,**
   Assistant Professor
   Department of Obstetric and Gynaecological Nursing
   Sri Gokulam College of Nursing, Salem.

ANNEXURE – F

CERTIFICATE OF EDITING

TO WHOMSOEVER IT MAY CONCERN

Certified that the dissertation paper titled **"A Study to Evaluate the Effectiveness of Oil massage on Selected Behavioural Response among Normal Newborns in Selected Urban Areas, Salem"** by **Ms. ANITHA MARY OYASIS. A,** It has been checked for accuracy and correctness of English language usage and that the language used in presenting the paper is lucid, unambiguous free of grammatical or spelling errors and apt for the purpose

SIGNATURE

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ANNEXURE – G

PHOTOS